UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,010	11/30/2001	Chiharu Nishizawa	Q67460	4232

7590 07/18/2002

Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037

EXAMINER
RIBAR, TRAVIS B

ART UNIT	PAPER NUMBER
1711	3

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

A8-13

Office Action Summary	Application No.	Applicant(s)	
	09/980,010	NISHIZAWA ET AL.	
	Examiner	Art Unit	
	Travis B Ribar	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☒ Claim(s) 7 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

Page 1, 2nd paragraph: "As conventional optical lenses, particularly, photochromic lenses, inorganic lenses have generally spread."

Page 3, 1st full paragraph.

Page 6, 1st full paragraph.

Claim Objections

2. Claim 7 is objected to because of the following informalities: "...contains tertiary hindered amine..." should read, "...contains a tertiary hindered amine..."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 1, it is unclear from the language of the claim what composition is claimed. For the purposes of this examination, this claim will be presumed to mean that the two liquid polyurethane comprises a polyurethane prepolymer, a curing agent, and a photochromic compound.

6. Regarding claim 8, it is unclear from the language of the claim what additives are claimed. For the purposes of this examination, this claim will be presumed to mean that the antioxidant is an antioxidant package that comprises at least three different types of hindered phenols.

7. Regarding claim 10, it is unclear from the language of the claim what structures are being claimed. The language of this claim precludes further examination.

8. Claim 11 recites the limitation "...said transparent resin..." in line 2. There is insufficient antecedent basis for this limitation in the claim.

9. Regarding claim 12, it is unclear from the language of the claim what polyurethane composition is claimed. For the purposes of this examination, this claim will be presumed to mean that the two liquid polyurethane comprises a polyurethane prepolymer, a curing agent, a photochromic compound, and a solvent.

10. Claims 2-7 and 9 are rejected due to their dependence from the above claims.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1, 2, 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ormsby et al.

Ormsby et al. discloses a multilayer laminate structure that includes two clear substrates with a polyurethane (PU) layer between them (column 3, lines 6-16). The PU layer contains the photochromic dye in claim 9 (column 4, lines 4-13) and is present between two clear transparent resin sheets, with the laminate structure formed by the method that the applicant claims in claim 12 (see the examples and column 3, line 62 to column 4, line 2). Ormsby et al. therefore meets these aspects of claims 9, 11, and 12.

Claims 1 and 2 are product-by-process claims. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (one-step polymerization or two-step polymerization) does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the

reference(s). This rejection under 35 U.S.C. 102 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

13. Claims 1, 2, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hitoshi et al., cited by the applicant as relevant prior art.

The abstract of Hitoshi et al. discloses a multilayer laminate structure that includes a polyurethane layer containing a photochromic dye (see the abstract). The transparent resin is taught to be a sheet, meeting this part of claim 11.

With regards to claims 1 and 2, these are product-by-process claims. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (one-step polymerization or two-step polymerization) does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 102 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

14. Claims 1, 2, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited relevant prior art, Japanese Patent Kokai No. 61-148048.

The applicant states that this prior art shows the invention of claims 1, 2, and 11 in the paragraph bridging pages 2 and 3 of the specification.

With regards to claims 1 and 2, these are product-by-process claims. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (one-step polymerization or two-step polymerization) does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 102 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hitoshi et al. in view of either Okoroafor et al., Rosthauser et al., or Ormsby et al.

Hitoshi et al. is applied to claim 1 as shown above. However, it does not explicitly state what kinds of dyes are used in the invention. Okoroafor et al. (column 10, lines 21-65), Rosthauser et al. (column 4, lines 11-19), and Ormsby et al. (column 4, lines 3-13) all show that the dyes in claim 9 are well-known in the art not only as photochromic dyes, but also as dyes that are compatible with PU resins.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the dyes shown in the secondary references in the invention shown in Hitoshi et al. The motivation for doing so would be that the dyes are known to work well in such applications. Therefore it would have been obvious to combine Okoroafor et al., Rosthauser et al., or Ormsby et al. with Hitoshi et al. to obtain the invention as specified in claim 9.

17. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's cited relevant prior art, Japanese Patent Kokai No. 61-148048 in view of either Okoroafor et al., Rosthauser et al., or Ormsby et al.

Japanese Patent Kokai No. 61-148048 is applied to claim 1 as shown above. However, it does not explicitly state what kinds of dyes are used in the invention. Okoroafor et al. (column 10, lines 21-65), Rosthauser et al. (column 4, lines 11-19), and Ormsby et al. (column 4, lines 3-13) all show that the dyes in claim 9 are well-known in

the art not only as photochromic dyes, but also as dyes that are compatible with PU resins.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the dyes shown in the secondary references in the invention shown in Japanese Patent Kokai No. 61-148048. The motivation for doing so would be that the dyes are known to work well in such applications. Therefore it would have been obvious to combine Okoroafor et al., Rosthauser et al., or Ormsby et al. with Japanese Patent Kokai No. 61-148048 to obtain the invention as specified in claim 9.

18. Claims 1-2, 5, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosthauser et al. in view of Ormsby et al.

Rosthauser et al. discloses a two-component PU (see examples) that comprises polyisocyanates and polyols. The polyurethane composition is used in lenses (column 12, lines 5-9) and includes a photochromic compound that meets the applicant's claim 9 (column 4, lines 11-19).

Rosthauser et al. does not, however, show the processing steps of claim 12 or the laminate requirements of claims 1 and 11. All of these parts of the claims are in Ormsby et al.

Ormsby et al. is discussed above and shows a laminate structure meeting the requirements of claims 1 and 11 formed from PU containing a photochromic compound, using the method in claim 12.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the PU composition in Rosthauser et al. to form the laminate structure disclosed in Ormsby et al. The motivation for doing so would be the reasonable expectation of similar results. Therefore it would have been obvious to combine Ormsby et al. with Rosthauser et al. to obtain the invention as specified in claims 1-2, 5, 9, and 11-12.

With regards to claims 1, 2, and 5, these are product-by-process claims. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (claim 1), the chemical structure of the PU prepolymer (claim 2), or the chemical structure of the curing agent (claim 5), both of which in this case are only low molecular-weight PU's with isocyanate or hydroxy functional groups present, does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 103 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

19. Claims 1-5, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al.

Okoroafor et al. discloses a PU resin made from a PU prepolymer and a polyol that includes a photochromic dye that fits the requirements of claim 9 (column 10, lines 21-65). The resulting polymer is used to make lenses (column 10, line 5). The PU prepolymer is made from a polyisocyanate (column 3, lines 60 to column 5, line 36) and a polyol (column 5, line 55), which meets the applicant's definition of 'curing agent'. The molecular weights of the polyisocyanate (column 6, lines 3-12) and the polyol compound (column 8, line 16 and lines 50-54) fit the requirements of claim 3, and the PU prepolymer is made from the compounds listed in claim 4 (column 5, lines 34-35 and column 8, line 14).

Okoroafor et al. does not, however, show the processing steps of claim 12 or the laminate requirements of claims 1 and 11. All of these parts of the claims are in Ormsby et al.

Ormsby et al. is discussed above and shows a laminate structure meeting the requirements of claims 1 and 11 formed from PU containing a photochromic compound, using the method in claim 12.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the PU composition in Okoroafor et al. to form the laminate structure disclosed in Ormsby et al. The motivation for doing so would be the reasonable expectation of similar results. Therefore it would have been obvious to

combine Ormsby et al. with Okoroafor et al. to obtain the invention as specified in claims 1-5, 9, and 11-12.

With regards to claims 1, 2, and 5, these are product-by-process claims. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (claim 1), the chemical structure of the PU prepolymer (claim 2), or the chemical structure of the curing agent (claim 5), both of which in this case are only low molecular-weight PU's with isocyanate or hydroxy functional groups present, does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 103 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

20. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosthauser et al. in view of Ormsby et al. as applied to claim 1 above, and further in view of Okoroafor et al.

The combined teachings of Rosthauser et al. and Ormsby et al. are applied to claim 1 as discussed above, but do not include the molecular weight requirements of

claim 3 or the compositional requirements of claim 4. Both of these requirements are found in Okoroafor et al.

Okoroafor et al. and its relevance to claims 3 and 4 is discussed above. It teaches the molecular weight and compositional requirements of these claims and their use in creating PU lenses.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the molecular weights and compositions taught in Okoroafor et al. in the PU composition in Rosthauser et al. The motivation for doing so would be to obtain a PU resin useful for making lenses. Therefore it would have been obvious to combine Okoroafor et al. with the combined teachings of Rosthauser et al. and Ormsby et al. to obtain the invention as specified in claims 3 and 4.

21. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al. as applied to claim 1 above, and further in view of Perrott et al.

The combined teachings of Okoroafor et al. and Ormsby et al. are discussed above. Okoroafor et al. discloses that antioxidants and light stabilizers are used in its invention (column 9, lines 41-55). It does not, however, state the exact light stabilizers and antioxidants that the applicant claims in claims 7 and 8.

Hindered amine light stabilizers (HALS) are well known in the art as light stabilizers for polymer compositions. It is also well known in the art to use hindered phenols as antioxidants, often as part of a multicomponent antioxidant package that

utilizes the properties of multiple antioxidants. Perrott et al. discloses both of these practices (column 6, lines 1-15).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use HALS and a multicomponent antioxidant package in the composition taught by Okoroafor et al. The motivation for doing so would be to add antioxidant properties and light stabilization properties to the composition. Therefore it would have been obvious to combine Perrott et al. with the combined teachings of Okoroafor et al. and Ormsby et al. to obtain the invention as specified in claims 7 and 8.

22. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosthauser et al. in view of Ormsby et al. as applied to claim 1 above, and further in view of the combined teachings of Okoroafor et al. and Perrott et al.

The combination of Rosthauser et al. and Ormsby et al. are discussed above, but do not disclose the use of HALS or antioxidants in the compositions taught therein.

Hindered amine light stabilizers (HALS) are well known in the art as light stabilizers for polymer compositions. It is also well known in the art to use hindered phenols as antioxidants, often as part of a multicomponent antioxidant package that utilizes the properties of multiple antioxidants. Perrott et al. discloses both of these practices (column 6, lines 1-15) and Okoroafor et al., discussed above, further teaches that such additives are used in PU compositions similar to the composition in Rosthauser et al.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use HALS and a multicomponent antioxidant package in the composition taught by Rosthauser et al. The motivation for doing so would be to add antioxidant properties and light stabilization properties to the composition. Therefore it would have been obvious to combine the teachings of Perrott et al. and Okoroafor et al. with the combined teachings of Rosthauser et al. and Ormsby et al. to obtain the invention as specified in claims 7 and 8.

23. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al. as applied to claim 5 above, and further in view of Toba et al.

The combination of Okoroafor et al. and Ormsby et al. is disclosed above, but does not expressly state that the tolylene diisocyanate (TDI) in claim 6 is useful in the PU composition. TDI is well known in the art to be a polyisocyanate useful in PU composition, and Toba et al. discloses a polyol made from TDI (column 11, line 64) used as part of a two-component PU adhesive (column 14, lines 56-63).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use TDI in the composition taught by Okoroafor et al. The motivation for doing so would be that TDI is a polyisocyanate known to form PU adhesive compositions, which is basically the function of the PU in the present invention. Therefore it would have been obvious to combine Toba et al. with the combined

teachings of Okoroafor et al. and Ormsby et al. to obtain the invention as specified in claim 6.

24. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosthauser et al. in view of Ormsby et al. as applied to claim 5 above, and further in view of the combined teachings of Okoroafor et al. and Toba et al.

The combination of Rosthauser et al. and Ormsby et al. is disclosed above, but does not expressly state that the tolylene diisocyanate (TDI) in claim 6 is useful in the PU composition. TDI is well known in the art to be a polyisocyanate useful in PU composition, and Toba et al. discloses a polyol made from TDI (column 11, line 64) used as part of a two-component PU adhesive (column 14, lines 56-63).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use TDI in the composition taught by Rosthauser et al. The motivation for doing so would be that TDI is a polyisocyanate known to form PU adhesive compositions, which is basically the function of the PU in the present invention. Therefore it would have been obvious to combine Toba et al. with the combined teachings of Rosthauser et al. and Ormsby et al. to obtain the invention as specified in claim 6.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis B Ribar whose telephone number is (703) 305-3140. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Travis B Ribar
Examiner
Art Unit 1711

TBR
July 14, 2002

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700